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| 09/698,168      | 10/30/2000  | Kosuke Inoue         | 500.39241X00        | 5655             |

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EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/698,168

Applicant(s)

INOUE ET AL.

Examiner

DiLinh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 35-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-48 is/are allowed.
- 6) ☒ Claim(s) 49 and 50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Embodiment 3, claim 12 in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 5/27/03 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 35, 49-50 are objected to because of the following informalities:

in lines 10-11 of claim 35, the limitation " the insulating layer" should be changed to –the electrically insulating layer-;

in line 11 of claim 35, the limitation "an inclined portion" should be changed to – the inclined portion-;

in line 12 of claim 35, the limitation "a flat portion" should be changed to –the flat portion-;

in line 11 of claim 49, the limitation "the insulating layer" should be changed to – the electrically insulating layer-;

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in line 10 of claim 50, the limitation "the insulating layer" should be changed to –  
the electrically insulating layer-.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
Shimoishizaka et al. (U.S. Pat. 6313532) in view of Tokunoh (U.S. Pat. 6465881) and  
further in view of Kambe et al. (U.S. Pat. 6323439).

Shimoishizaka et al. disclose a semiconductor apparatus (figs. 1-6) comprising:  
a semiconductor device 10;  
an electrically insulating layer 20 (column 6, lines 6-8) having an inclined portion  
formed on the semiconductor device;  
an external connection terminal 40 formed on the electrically insulating layer; and  
a wiring 31 formed on the electrically insulating layer and provided for electrically  
connecting the external connection terminal to a circuit electrode 11 of the  
semiconductor device,  
wherein the electrically insulating layer 20 has a thickness in a range of from 35-  
150micrometers (column 7, lines 5-6).

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Tokunoh discloses a semiconductor device (cover fig.) comprising an insulating layer 29 has a protrusive portion, the position of which is higher than a flat portion of the insulating layer having an substantially uniform thickness. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Shimoishizaka et al. to decrease the contact resistance of the feeding path and to improve the power feeding capability of the semiconductor device, as shown by Tokunoh.

Shimoishizaka et al. and Tokunoh fail to disclose the wiring is constituted by a copper wire and a nickel layer formed on the copper wire.

Kambe et al. disclose a semiconductor device (cover fig.) comprising: a wiring layer forming a double structure comprising a copper layer and a nickel layer (column 4, lines 60-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Shimoishizaka et al. and Tokunoh to increase the electrical connection of the wiring layer, as shown by Kambe et al.

### **REASONS FOR ALLOWANCE**

Claims 35-48 would be allowable if rewritten to overcome the claim objections set forth in this Office action and to include all of the limitations.

The following is an examiner's statement of reasons for allowance:

Shimoishizaka et al. fail to disclose the combination of all the limitations recited, including the electrically insulating layer has a protrusive portion which is higher than a height of a flat portion of the electrically layer near a boundary between the inclined

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portion and the flat portion having a substantially uniform thickness and wherein a part of the wiring is formed on the protrusive portion, and the wiring comprises a copper and a nickel layer formed on the copper layer.

Tokunoh fails to disclose the combination of all the limitations recited, including the electrically insulating layer has a protrusive portion which is higher than a height of a flat portion of the electrically layer near a boundary between the inclined portion and the flat portion having a substantially uniform thickness and wherein a part of the wiring is formed on the protrusive portion.

Therefore, the claimed invention is not shown in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

Applicant's arguments with respect to claims 49-50 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN  
August 1, 2003

A handwritten signature in black ink, appearing to be 'Long Pham', written in a cursive style.

LONG PHAM  
PRIMARY EXAMINER